

Revised FS Chemical of Concern (COC) Issue 2.2. Draft Action Items for 27-Feb-14 Meeting.¹

Meeting Action Items:

1. EPA supply final COC table to LWG (there was at least one change noted during the meeting). EPA supplied this table on 3-Mar-14 and an update on 14-Mar-14.
2. LWG (Laura Kennedy) will double check whether there are any other chemicals that were in BHHRA Table 7-1 that did NOT make it through to EPA's COC list. [Given EPA has updated their COC table, the LWG considers this step done. Additional EPA PRG table revisions were provided on 12-Apr-14.]
3. LWG (John Toll) will go back and see how dieldrin and aldrin were evaluated in BERA to determine whether LWG agrees with aldrin as a COC. [This review complete. LWG does not agree that Aldrin is a COC.]
4. EPA and LWG PRG technical group to discuss on March 4 how EPA's new TEQ fish consumption PRG was calculated. This was discussed on 4-Mar-14.
5. LWG (Gene Revelas) will provide the updated range of background values for the RI consistent with the negotiated RI Section 7 approaches, including associated minor statistical adjustments recommended by Integral on 27-Feb-14, for use in the FS.
6. LWG (AnchorQEA) will review EPA's PRG and background tables to determine if potentially critical FS COCs are missing background values. If so, LWG will calculate background values if data is available. [No missing background values were found.]
7. EPA will develop and provide information on the additional background methods that may be used in the revised FS at least two weeks before 27 June 2014.
 - LWG (Carl Stivers) will identify the dates by which this information should be made available to support related future issue resolutions.
 - These dates have been identified as the meeting dates for alternatives screening and detailed evaluation discussions. These are Issues 3.14 and 4.11 slated to be resolved by 27-June-14 and 26-Sep-14, respectively. The LWG suggests EPA provide this background methods information at least two weeks before the 27-June-14 date.

FS Revision Process Matrix Outstanding COC Action Items:

1. LWG review of EPA updated COCs table by April 25 was added to the matrix. [Done. LWG provided list of outstanding issues on 23-Apr-14.]

¹ Items completed are indicated with strikethrough.

Revised FS Preliminary Remediation Goals (PRG) Issue 2.3. Draft Action Items for 4-Mar-14 Meeting.¹

Meeting Action Items: (These were not discussed at the end of the meeting due to lack of time, but were mentioned during the course of the meeting)

1. ~~EPA will correct Arsenic cancer beach PRG cut and paste error.~~
2. ~~LWG to investigate a potential proposal for resolving the in-water sediment site use factor in the calculation of these PRGs.~~ [Investigation complete and was discussed at 18-Mar-14 meeting.]
3. ~~LWG may investigate ways to better calculate a TEQ PRG that addresses EPA's stated concerns.~~
4. ~~EPA agreed that tissue PRGs need to be converted from fillet to whole body in the PRG table.~~ [EPA's 14-Mar-14 PRG table notes the values are for fillet comparison.]
5. ~~EPA is going to consider whether 2/24 samples exceeding the HQ>1 for the spotted sandpiper DDx warrants a PRG being carried forward into the FS, and if we do, where does it go?~~ [This appears to be resolved through item 7.]
6. ~~EPA agreed to delete lead and antimony as Eco. PRGs (due to "sinker" issue).~~
7. ~~LWG will provide full list of Eco. PRGs with HQ<1 to Burt. (John Toll sent this 4-Mar-14.) Burt to review and reply with a rationale for having PRGs for these chemicals or not.~~ [Through further discussions EPA has removed the DDx PRGs related to osprey egg LOE, dietary dose for hooded merganser LOE, and dietary dose for belted kingfisher LOE. The status of the osprey and bald eagle dietary dose PRGs for PeCDF and total DDx appears to be that EPA is still considering those].
8. ~~Remaining water PRGs questions and any additional LWG questions from EPA's 2-Mar-14 PRGs information will be discussed in 18-Mar-14 meeting.~~ [These items were discussed at the 27-Mar-14 meeting.]

FS Revision Process Matrix Outstanding PRG Action Items:

1. ~~EPA provide write up of BaPEq PRG [reiterated on 27-Mar-18]. EPA will provide calculations used to develop BaPEq PRG. Spatial scale application of BaPEq to be discussed during 4/15 meeting.~~ [Done – provided on 12-Apr-14] The EPA write-up will be provided with the Section 2 write-up at a later date (Updated per 4/7/2014 email from Kristine Koch)
2. ~~EPA share PRG calculations. (EPA provided direct contact PRG calculations on 2-Mar-14. The LWG's understanding was that all PRG calculations would be provided by EPA at some point.)~~ [EPA provided an additional calculation spreadsheet on 18-Mar-14.]
3. ~~LWG to review 12-Apr-14 EPA update of PRGs tables by 25-Apr-14 was added to matrix.~~ [Done. LWG provided outstanding PRG issues list on 23-Apr-14.]

¹ Items completed are indicated with strikethrough.

Revised FS Remedial Action Levels (RALs) Issue 3.3. Draft Action Items for 13-Mar-14 Meeting.¹

Meeting Action Items and Resolutions:

1. ~~LWG provide additional benthic risk area maps showing PEC and PEL exceedances. This was sent on 13-Mar-14 and the technical leads discussed on 13-Mar-14. Additional discussions to take place on 18-Mar-14, as needed. [Additional discussions completed at 18-Mar-14 meeting.]~~
2. ~~The level of incorporation and integration of the DDx RALs into the revised FS various analyses and presentations will be discussed further at an upcoming meeting. [Discussed at 22-May-14 meeting. Additional action items, identified see below.]~~
3. ~~EPA will provide LWG with the SDU and SMA shapefiles and supporting information. [EPA sent SDU shapefiles on 22-May-14.]~~
4. ~~Resolution: EPA will present D/F TEQ as the required RALs in the revised FS. The revised text will explain that PCDF levels are used in mapping and other analyses as a close approximation of TEQ RALs for logistical reasons. EPA indicated this should be discussed as part of SMAs since SMAs are defined by RALs. (Updated per 4/7/2014 email from Kristine Koch) [Discussed at 22-May-14 meeting. Additional action items identified, see below.]~~
5. ~~TEQ PRG to be discussed again at an upcoming meeting. [This item was not discussed at the 18-Mar-14 or 27-Mar-14 meetings.] EPA indicated this is a RAL issue instead of a PRG issue. (Updated per 4/7/2014 email from Kristine Koch) [Discussed at 22-May-14 meeting. Additional action items identified, see below.]~~
6. ~~EPA to provide an updated PRG list by 14-Mar-14. [EPA provided updated list on date noted. Additional revisions provided on 12-Apr-14.]~~
7. ~~The level of incorporation and integration of the BaPEq RALs in the navigation channel into the revised FS various analyses and presentations will be discussed further at an upcoming meeting. EPA indicated this should be discussed as part of SMAs since SMAs are defined by RALs. (Updated per 4/7/2014 email from Kristine Koch) [Discussed at 22-May-14 meeting. Additional action items identified, see below.]~~

FS Revision Process Matrix Outstanding RAL Action Items: None.

¹ Items completed are indicated with strikeout.

Revised FS COC and PRGs Second Meeting - Issues 2.2 and 2.3. Draft Action Items for 18-Mar-14 and 27-Mar-14 Meetings.¹

18-Mar-14 Meeting Action Items and Resolutions:

1. Resolution: It was agreed that EPA would move the PCB PRG of 64 ppb under RAO 5 to RAO 6. This is because the PRG is bioaccumulation related and RAO 6 pertains to bioaccumulation risks. Per 4/4/4014 email from Kristine Koch, EPA did not agree to this. [EPA changed the value to 126 ppb in 12-Apr-14 version, which LWG reviewed and determined was still an outstanding issue (i.e., the derivation of the new PRG is unclear.) EPA indicated on 8-May-14 that the PRG should be 64 ppb. **LWG will review EPA's updated PRGs table when provided.**]
2. ~~EPA will provide final PRGs for dioxin-furan TEQ and PCBs for RAO 6.~~ [EPA provided new values in 12-Apr-14 version. LWG reviewed the new version and determined a conflict between the EPA's COC list and the doxin/furan TEQ PRG.]
3. Resolution: ~~EPA will delete the Lead PRG for RAO 6 because there are no ecological lead risks in the BERA, except for benthic, which is addressed by the lead PRG for RAO 5.~~ [Done]
4. ~~EPA will review and confirm whether the RAO 1 BaPEq PRG of 42 ppb needs further revision.~~ [EPA changed this value to 12 ppb in the 12-Apr-14 version, and LWG has no objections at this time to this value (i.e., informal non-binding).]
5. Resolution: ~~EPA will move the organism plus water AWQC-based water PRGs from RAO 3 to a new surface water column under RAO 2. This is because these are bioaccumulation AWQC and RAO 2 pertains to bioaccumulation.~~ [Done in 12-Apr-14 version. LWG reviewed the new version and confirmed that the water PRGs were moved, but still does not agree fully on the list of PRGs presented as detailed in the outstanding PRG issues list.]
6. **EPA will revise hexachlorbenzene PRG under RAO 2 so that it is on a dry-weight basis.** [EPA changed this value in 12-Apr-14 version. LWG reviewed this version and found discrepancies between the value in the table and the value noted in EPA's email. **This value still needs confirmation by EPA.**]
7. ~~EPA to provide LWG with calculation spreadsheets for pathways other than sediment direct contact.~~ [This was provided by EPA on 18-Mar-14.]
8. ~~LWG will review Item 7 information on PBDE RAO 2 tissue PRG calculations and reply to EPA with any additional questions on this PRG.~~ [The LWG reviewed the 12-Apr-14 PRG table. This PRG was developed for subsistence fish consumption, which wasn't evaluated in the BHHRA. Per LWG PRGs outstanding issues list, PRGs should be presented only for those chemicals found to pose risk in the risk assessments.]
9. ~~EPA will provide additional information to LWG on the PRG application spatial scales.~~ [Superseded by 27-Mar-14 action item.]
10. ~~EPA to provide any new questions about CBRAs and opinion on whether any changes are needed to CBRAs for FS purposes.~~ [EPA provided updated CBRAs on 4-Apr-14.]
11. EPA/LWG will work together to increase the detail of the CBRA description in the revised FS.
12. EPA and LWG need to discuss after any CBRAs are complete how benthic PRGs can be made consistent with the CBRA approach. [LWG reviewed 12-Apr-14 PRGs table for this issue. This was discussed on 24-Apr-14 and 8-May-14, but LWG and EPA disagreed on the appropriate benthic PRGs.]

27-Mar-14 Meeting Action Items and Resolutions on PRGs:

1. **EPA to check whether draft FS capping evaluation still OK for revised FS purposes** (i.e., determine whether new water PRGs need to be added to this analysis or not). EPA indicated

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capping evaluation is not a PRG issue. This will be done in screening of alternatives in section 3 and evaluation of alternatives in Section 4. (Updated per 4/4/2014 email from Kristine Koch)

2. ~~EPA will consider whether to create a water PRG column under RAO 6 and move the bioaccumulation water TRVs for PCBs and DDT to RAO 6 (similar to changes agreed to for human health).~~ [EPA's 12-Apr-14 version of PRGs table added this column. The LWG reviewed this column and had no issues stated in the outstanding PRGs list of 23-Apr-14.]
3. ~~Kristine and Burt will discuss whether manganese PRG for RAO 8 should be changed (i.e., potentially come off the RAO 8 PRG list, changed to "source" rationale, or moved to another RAO).~~ [No changes made in EPA's 12-Apr-14 version of PRGs table. LWG reviewed the table and continues to disagree that "source" PRGs should be presented.]
4. ~~EPA will change the RAO 8 PRG value for 1,1-DCE from 47 ug/L to 25 ug/L. EPA indicated this is done per 4/4/2014 email from Kristine Koch.~~ [Change made in EPA's 12-Apr-14 PRGs table.]
5. ~~EPA will provide updated PRG/COC tables to LWG including additional description of the PRG spatial scales.~~ [Updated PRG/COC tables provided on 12-Apr-14. New spatial scales were provided on 18-Apr-14, which LWG is currently reviewing.]
6. ~~LWG to provide list of detailed questions or concerns on each spatial scale footnote from Item 5, as necessary. See action items from 15-Apr-14 meeting regarding spatial scales.~~ [This item was superseded by EPA's new spatial scales on 18-Apr-14, which LWG is currently reviewing.]
7. ~~EPA and LWG will list specific PRG and COC issues that have yet to be resolved and compare lists regarding those outstanding items. (Dates will eventually need to be set for resolution of outstanding items.) EPA indicated they do not have any issues with COCs or PRGs (per 4/4/2014 email from Kristine Koch). Additional discussion regarding spatial scales for various PRGs occurred during the 4/15 technical meeting. EPA still considering bird egg PRG for dioxin and will inform LWG of any value proposed for this PRG.~~ [LWG is reviewed EPA's 12-Apr-14 PRG table for this issue. See outstanding list of issues from LWG on 23-Apr-14.]

FS Revision Process Matrix Outstanding PRG Action Items: See previous sheets on COCs and PRGs.

8-May-14 Meeting COC and PRG Action Items:

1. ~~EPA will send all the spreadsheets and data on PRG calculations. [Partially Done. EPA sent human health fish consumption calculation spreadsheets on 16-May-14.]~~ [Additional clarification of the request from LWG to EPA was provided on 23-May-14.]
2. ~~LWG to propose alternative method for calculating Dioxin/Furan TEQ PRG for RAO 2.~~ [Done. LWG provided method description on 19-Jun-14.]
3. **EPA will provide an updated PRGs table with a number of additional revisions.**
4. ~~LWG to propose alternative Mn ecological water toxicity value.~~ [Done. LWG provided alternative Mn toxicity value proposal on 19-Jun-14.]

Revised FS SDU Meeting - Issues 3.2. Draft Action Items for 27-Mar-14 Meeting.¹

27-Mar-14 Meeting Action Items and Resolutions on PRGs:

1. ~~EPA to consider whether any additional information is needed to make decisions about SMA changes for the revised FS and inform LWG of those information needs. EPA indicated that SMA decisions have no bearings on SDUs, this is a 3.8 issue. (Updated per 4/4/2014 email from Kristine Koch).~~ Spatial application of PRGs to SMA post-cleanup areas could affect SDU analysis

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~~(e.g., effectiveness). To be discussed at a later date. [This was discussed on 22-May-14. See action items there.]~~

2. EPA to complete SDU analysis, which is expected to include evaluation of risk reduction.
3. ~~EPA will provide a copy of the SDU presentation to LWG. [Presentation provided on 28-Mar-14.]~~

FS Revision Process Matrix Outstanding SDU Analysis Action Items: None.

Revised FS Technology Application, TZW areas, and SMAs - Issues 2.4 through 2.8, 3.7, and 3.8. Draft Action Items for 01-Apr-14 Meeting.¹

1. ~~EPA provide slides of their presentation [EPA provided presentation on 1-Apr-14.].~~
2. ~~EPA to provide EPA's draft GIS mapping layers harbor wide showing 1) technology selections for each pixel, 2) the criteria score for each pixel and 3) a bullet list of assumptions or processing steps used for any layers that were not taken straight from the draft FS (e.g., debris mapping differed from FS).~~
3. ~~LWG to provide additional information to EPA: the Sept 2002 and Feb/Mar 2004 bathymetry data — these data sets were missing or corrupted from the previous CDs/DVDs provided to EPA earlier. File format should be raster or grid file in ArcGIS format with 1 meter max pixel size/grid spacing.~~
4. ~~LWG to provide: the "Site Dredging and Capping Activities" map Figure 2.4-4 from the Draft FS. File format should be an ArcGIS shape file or polygon file in a geodatabase.~~
5. ~~LWG to update FS revision process matrix with items still yet to be discussed (for tracking purposes).~~

FS Revision Process Matrix Outstanding Technology, TZW, or SMA Action Items:

1. ~~Decision regarding final shapes of SMAs for revised FS to be discussed on May 22. [Discussed on 22-May-14. Additional action items identified, see list below.]~~

Technology Screening Second Meeting – Issues 2.8. Draft Action Items for 24-Apr-14 Meeting.

1. ~~LWG will provide written information for the specific suggestions on the technical criteria changes discussed in the meeting. [Done. Provided on 2-May-14].~~
2. ~~LWG to provide GIS layer for additional structure restrictions to EPA. [Done. Provided on 29-Apr-14.]~~
3. ~~LWG provide any available information on cobble, hardpan, bed rock criteria. [Done. Provided on 8-May-14.]~~
4. ~~LWG provide an assessment of "constructability step" of the technology evaluation (i.e., what are the common themes or rules that LWG would suggest for this). [Done. LWG provided assessment on 23-May-14.]~~

FS Revision Process Matrix Outstanding Technology, TZW, or SMA Action Items: None.

1. None.

¹ Items completed are indicated with strikeout.

Principal Threat Waste and Spatial Scales – Issues 3.5 and 2.3 Draft Action Items for 15-Apr-14 Meeting.¹

1. ~~Conduct later discussion of PTW evaluation steps.~~ [Additional discussion took place at 5-Jun-14 meeting.]
2. ~~EPA provide PRG spatial scales (bullet list) for each RAO.~~ [EPA provided this on 18-Apr-14. Done.]
3. ~~LWG provide some suggestions on replacement values for various FS analysis.~~ [Done. LWG provided email on 30-May-14.]
4. LWG consider and propose methodologies for the residual risk analysis concept for revised FS.

FS Revision Process Matrix Outstanding Technology, TZW, or SMA Action Items: None.

2. LWG review EPA PTW memo and presentation and provide feedback to EPA. [Update: EPA provided a revised memo on 6-Jun-14. The LWG is now proceeding with the review.]

¹ Items completed are indicated with strikeout.

SMA, Buried Contamination, CDF Water and Sediment Treatment, and Disposal Sites – Issues 3.8 through 3.12 - Draft Action Items for 8-May-14 Meeting.¹

1. EPA and LWG review sediment treatment discussion in T4 Design. LWG (Port) summarize the assumptions of the example and costs associated with sediment treatment and provide to EPA.
2. LWG (Port) summarize sections of T4 Design that discuss water treatment and provide to EPA.
3. LWG (Port) summarize CDF loading rates from T4 Design and compare to range of reasonable dredging production rates to reconcile potential water overflow at T4 CDF and provide to EPA.
4. LWG will review draft FS information for upland transload facility and provide description of how that is included in the draft FS disposal cost estimates. [See updated EPA request under Item 12 below.]
5. LWG will summarize any available barging cost estimates and provide to EPA. [See updated EPA request under Item 12 below.]
6. LWG will provide map from draft FS showing RAL exceedances in core as compared to SMA outlines. [Done. LWG provided map on 9-May-14.]
7. LWG will provide analysis from draft FS examining PRG exceedances for non-RAL chemicals below RAL depth of impact horizons. [Done. LWG provided analysis on 9-May-14.]
8. LWG will provide simple RAL maps that show SMAs without CDFs present. [Done. Provide on 9-May-14.]
9. LWG provide map comparing EPA RAL chemicals SMAs to LWG RAL chemicals SMAs using LWG mapping technique. [Done. Provided on 14-May-14.]
10. LWG provide GIS layer showing EPA RAL chemical SMAs using LWG mapping techniques. [Done. Provided on 14-May-14.] CDM will develop map comparing LWG to EPA mapping techniques. [Done. CDM provided GIS layers on 21-May-14.]
11. LWG will provide existing subSMA pixel map comparison (including GIS zip file to Todd). [Done. Provided on 9-May-14.]
12. EPA provided a more detailed list of CDF disposal information requests to LWG on 15-May-14 [A conference call was held on 16-Jun-14 to clarify EPA's requests.]:
 - a. Need more detail on GAC cost of \$16m (i.e. basis of choice of 0.1% when mixing directly with sediment vs. the range used for PRB of 0.1 to 1%, e.g. why not a range of application % for direct treatment?, likely unit cost based on x, etc.)
 - b. Water treatment of overflow weir costs are needed (as needed, primarily for solids provided GAC direct sediment treatment is used) cost needed.
 - c. Defining which alternatives the CDF would be attached to (deferred until optimized alternative development) based on likely fill volumes/acceptance, assumed % necessary to initiate construction (e.g. 150% of CDF capacity/acceptable wastes to be dredged is the target to attach the CDF to an optimized alternative)—open item.
 - d. Has air monitoring been included (reference)? If not, need to add to construction monitoring cost line item.

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- e. ~~Need placeholder costs for interim closure thin layer sand caps (specific reference).~~
- f. ~~It would be helpful to know the circumstances of the CDF failure referenced in this week's KOIN6 article: <http://koin.com/2014/05/13/fears-willamette-waste-response-coming-boil/> relative to whether the CDF concept in current consideration for the FS with its associated performance standards has addressed these issues to some degree in the 60% design. To my knowledge, this story wasn't fully appreciated during our T4 design process.~~ [Done. LWG provided this information to EPA on 26-Jun-14.]
- g. Related comparative items:
 - i. Cost of onsite vs offsite transload facilities needed and assumed production rates (the same or different from T4 transload rate)—please provide reference in the FS.
 - ii. Need to include costs of barging vs rail—please provide reference in the FS.

SMA and Dredge Depths – Issues 3.8 through 3.13 - Draft Action Items for 22-May-14 Meeting.¹

1. ~~LWG will calculate acreage differences between the two SMA approaches (EPA vs draft FS) including a breakdown by cause (each RAL difference), the map artifacts changes, and the buried contamination areas.~~ [Done. LWG provided acreage comparison of two SMA approaches on 4-Jun-14. LWG provide breakdown by cause on 17-Jun-14.]
2. ~~EPA will provide by RAL GIS layers for EPA's map to LWG.~~ [Done. EPA provided this on 27-May-14.]
3. ~~LWG will provide a two layer map of just the total alternative outlines for draft FS SMAs and EPA's SMAs.~~ [Done. LWG provide this to EPA on 2-Jun-14.]
4. ~~LWG will provide a subSMA assignments map with bathymetry added.~~ [Done. LWG provided this to EPA on 28-May-14.]
5. ~~LWG to create some additional cross sections through some SMAs and provide as figures.~~ [Done. LWG provided this to EPA on 2-Jun-14.]
6. ~~EPA to provide refined pixel score maps, which would be integrated into map for 4 above.~~ [See action Item 1 under 5-Jun-14 meeting.]

¹ Items completed are indicated with strikeout.

Technology Assignment, PTW, Source Material, and SMAs – Issues 2.8, 3.5, and 3.8. Draft Action Items for 5-Jun-14 Meeting.¹

1. ~~EPA will rerun the technology scoring pixel map based on changes discussed today.~~ [Done. EPA provided revised map GIS layer on 9-Jun-14.]
2. EPA to map areas that fall into new source material definition.
3. LWG to consider other options for preference of removal thresholds that may have a more clearly definable rationale.
4. ~~EPA to provide a revised second principal threat waste memo.~~ [Done. EPA provided on 6-Jun-14.]
5. EPA to provide written responses on the LWG screening approach.
6. ~~EPA to provide today's presentation slides.~~ [Done. EPA provide on 6-Jun-14.]

Technology Assignment, PTW, Source Material – Issues 2.8, 3.5, and 3.8. Draft Action Items for 5-Jun-14 Meeting.

1. LWG complete three examples (Evraz, Gasco, and Arkema) before July 8 meeting of:
 - a. LWG add cores with RAL exceedances to each existing x-section. This is a first step in helping EPA evaluate 3-D issues associated with technology assignments.
 - b. LWG add cores with PRGs exceedances to separate set of x-sections, for comparative purposes. This is another first step example to help EPA.
 - c. LWG to look at plan view of DOIs using polygons or dots. If it appears useful, provide this to EPA as well as another example that may help EPA.
2. ~~LWG to provide Koch with description how to fulfill EPA's previous requests for depth of contamination maps/tables.~~ [Done. LWG emailed EPA on 12-Jun-14.] **EPA to edit description and return to LWG to clarify request.**
3. ~~LWG review past action items from previous meetings for items that are still highest priority for July 8 (i.e., those related to technology assignment and depth issues).~~ [Done. LWG emailed EPA on 12-Jun-14.]

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